PostScript

LETTERS

Placement confirmation of Sengstaken–Blakemore tube by ultrasound

The management of oesophageal bleeding disorders remains a challenging problem in the emergency department. Oesophageal varices are dilated veins; they are most commonly a result of portal hypertension and are often associated with a poor outcome.[1] Haemorrhage from oesophageal varices is a life-threatening emergency with a mortality rate of 30–50%. Approximately 90% of patients with cirrhosis will develop varices, of which bleeding occurs in 25–35%.[2] Balloon tamponade is one of the methods for temporary control of acute variceal haemorrhage and works by directly compressing the varices at the bleeding site. Placement of a Sengstaken–Blakemore tube into the gastric fundus controls variceal bleeding via a tamponading effect. However, incorrect placement of the tube with inflation of the balloon in the oesophagus may cause oesophageal perforation or extrinsic compression of the trachea.[3] The Sengstaken–Blakemore tube can be placed nasogastrically or orogastrically and maintained in the correct position as confirmed by chest radiograph. Traditionally, the tube is first presumed to be placed in the stomach, then the gastric balloon is partially inflated with 50 cc of either water or air. A chest *x* ray is required to confirm the position of the gastric balloon in the stomach before it can be fully inflated. However, the partially inflated balloon is not always visualised on chest *x* ray. Other methods for placing the Sengstaken–Blakemore tube utilising endoscopic confirmation have been reported.[4] However, endoscopic confirmation is not readily available in all clinical areas, and there may be undue delay in placing the Sengstaken–Blakemore tube if it is recommended for all procedures. We describe an easy-to-use method with ultrasound that is readily available in every emergency setting for Sengstaken–Blakemore tube placement confirmation.

For ultrasound confirmed placement of the Sengstaken–Blakemore tube, it is inserted and the patient is placed in a supine position. The transducer is placed sagittally along the midline of the epigastrium and then tilted toward the patient's left to identify the gastroesophageal junction. With the gastroesophageal junction in view, the ultrasound probe is rotated counterclockwise to best see the liver, aorta and lower oesophageal sphincter. This view confirms the presence of the tube traversing through the lower oesophagus sphincter into the stomach (fig 1). However, failure in identifying the gastroesophageal junction due to a poor echo window sometimes occurs, especially in those with massive ascites and/or obesity. Because patients who require gastroesophageal tamponade for active variceal haemorrhage are almost always hemodynamically unstable, delay in inflating the balloon may have serious consequences. The use of ultrasound in this emergency setting obviates the need for a possibly equivocal radiograph confirmation and can improve patient care. The proficiency of emergency department physicians in performing ultrasound examinations should be enhanced.

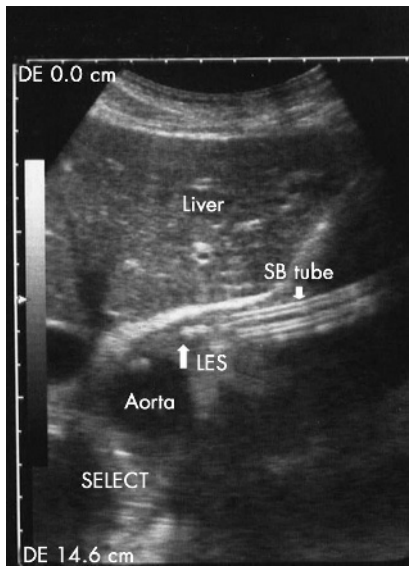

Figure 1 The liver, aorta and lower oesophagus sphincter (arrow) are seen and the image represents the passage of the Sengstaken–Blakemore tube through the lower oesophagus sphincter into the stomach.

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Are chest pain observation units essential for rapid and effective emergency care in the UK?[1]

It has been suggested that chest pain observation units are a cost effective solution to the risks inherent in assessing patients at risk of myocardial infarction and its sequelae within emergency departments in the UK. Their function requires that patients are monitored closely for several hours, and they consume significant resources.

An alternative is the use of a rapid 90 minute rule-out method, incorporating myoglobin along with creatine kinase-MB (CK-MB) and troponin I.[2 3] This has a sensitivity and negative predictive value of 100% for myocardial infarction, reduces coronary care unit (CCU) admissions by 40%, and does not require a dedicated observation unit.[2] The method is particularly useful for patients with non-diagnostic electrocardiograms (ECGs).

We have modified the method described by Ng *et al*[2] for use in our department.

Patients presenting with chest pain suggestive of acute myocardial ischaemia but with a non-diagnostic ECG on arrival are tested for myoglobin, troponin I, and CK-MB, using point of care, whole blood testing (BioSite Inc., San Diego, USA). The ECG and cardiac markers are repeated in 90–120 minutes. Patients with a rise in myoglobin of 25% or more (even if both values are normal) or a sustained elevation of any of the three markers are referred to cardiology. If ECGs and markers remain normal and if there is not a rise in myoglobin of greater than 25%, patients may be safely discharged, all other things being equal. Otherwise, further management is weighted by clinical risk stratification[4]—for example, patients with persistent pain suggestive of unstable angina, but whose markers and ECGs are normal, are not discharged. A decision is taken, in consultation with the cardiologist on call, to admit them to cardiology or general medicine as an acute coronary syndrome.

We have used this pathway in our emergency department for over 3 years without any additional staffing. In a 3 month audit of the first cohort of 197 patients, we found a 44% reduction in chest pain admissions compared to historical controls. There were also earlier and more appropriate referrals to CCU. This audit included the use of 30 day telephone follow up with 100% contact. One adverse event was noted in a patient who was discharged; this was a protocol violation and the patient should have been admitted. We are aware of one patient who suffered an infarct after discharge within the whole period. This patient was discharged by a new doctor who had not yet been given induction in the pathway. Two patients, who were sent home from the department, died suddenly, presumably from fatal arrhythmias. In both, their pain was in the abdomen so the protocol was not used.

Triple marker testing costs about £30 per patient for two serial tests. The pathway works 24 hours a day, seven days per week, and requires little additional training for medical and nursing staff. We suggest this pathway is effective in the emergency department assessment of patients with acute chest pain.

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